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(54) Title: **CHARACTERISING POLYPEPTIDES**

(57) Abstract: Provided is a method for characterising an analyte by matrix assisted laser desorption ionisation (MALDI) mass spectrometry, which method comprises: (a) labelling the analyte with a light-absorbing label that absorbs light at a pre-determined frequency, to form a labelled analyte; (b) embedding the labelled analyte in a matrix formed from at least one compound that absorbs light, to form an embedded labelled analyte; (c) desorbing the embedded labelled analyte by exposing it to light having the pre-determined frequency, to form a desorbed analyte; and (d) detecting the desorbed analyte by mass spectrometry to characterise the analyte; wherein the light absorbing label comprises a fluorophore moiety, and wherein prior to detecting by mass spectrometry, the analyte is selected for detection on the basis of its fluorophore moiety.

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